Pelagic birding trips in the southern Mozambique Channel

Peter G. Ryan[a], *John Graham*[b] *and Andrew C. Sutherland*[c]

Voyages ornithologiques dans le sud du Canal de Mozambique. Deux voyages ornithologiques ont été organisés dans le sud du Canal de Mozambique avec des navires de croisière affrétés, en février 1997 et en novembre 2005. Bien que l'objectif principal était de donner l'occasion à des 'cocheurs' régionaux d'observer des oiseaux de mer tropicaux à l'intérieur des eaux d'Afrique australe, ces voyages ont néanmoins fourni des nouvelles données sur la distribution et le nombre des oiseaux de mer au large du KwaZulu-Natal septentrional et du Mozambique méridional en été. La Sterne fuligineuse *Sterna fuscata* était l'espèce la plus abondante au cours des deux voyages; elle était commune au sud de son aire de répartition habituelle. De petits nombres de Sternes bridées *S. anaethetus* étaient associés à des groupes de Sternes fuligineuses en novembre 2005, indiquant que cette espèce pourrait être plus commune dans le sud du Canal de Mozambique qu'on ne le pensait. Des migrateurs paléarctiques, notamment le Puffin cendré *Calonectris diomedea* et le Labbe à longue queue *Stercorarius longicaudus*, étaient communs en février 1997, mais pas en novembre 2005, probablement parce qu'ils étaient encore en train d'arriver dans la zone après avoir fait le tour du Cap. Le voyage de novembre est allé plus au nord que celui de février, et a quitté les eaux de l'Afrique australe pour naviguer autour de l'île Europa. Ainsi, beaucoup plus d'espèces tropicales ont été observées. Plusieurs Pétrels de Jouanin *Bulweria fallax* ont été identifiés dans le Canal à l'est de Inhambane, Mozambique; ceci ne constitue que la troisième donnée pour cette espèce dans les eaux d'Afrique australe. La quatrième donnée du Pétrel de Barau *Pterodroma baraui,* vu au large du KwaZulu-Natal septentrional, constitue probablement l'observation la plus intéressante de ces voyages.

Summary. Two birding trips were made in the southern Mozambique Channel, in February 1997 and November 2005. Geared largely to viewing tropical seabirds within southern African waters for regional listers, they nonetheless provided some novel insights into the summer distribution and abundance of seabirds off northern KwaZulu-Natal and southern Mozambique. Sooty Terns *Sterna fuscata* were the most abundant species on both trips, and were common south of their generally accepted range. Small numbers of Bridled Terns *S. anaethetus* were associated with the Sooty Tern flocks in November 2005, suggesting this species may be more common than previously thought in the southern Mozambique Channel. Palearctic migrants, notably Cory's Shearwaters *Calonectris diomedea* and Long-tailed Skuas *Stercorarius longicaudus,* were common on the February trip, but not in November, presumably because they were still moving into the area after moving around the Cape. The November trip reached further north and ventured outside southern African waters around Europa Island. As a result, many more tropical species were seen. Several Jouanin's Petrels *Bulweria fallax* were observed east of Inhambane, Mozambique, only the third time this species has been recorded in southern African waters. The highlight was probably the fourth record of Barau's Petrel *Pterodroma baraui,* seen off northern KwaZulu-Natal.

Due to its position bordering one of the world's most dynamic areas of ocean, southern Africa boasts an exceptional diversity of seabirds, with some 112 species recorded from the region, almost one-third of all seabirds. Most species occur in the productive waters associated with the Benguela upwelling region and the Agulhas retroflection south and west of Africa. However, smaller numbers of largely tropical seabirds occur in the Mozambique Channel. For some time birders have had the chance to pursue southern seabirds on birding trips operating from Cape Town—mainly one-day charters on small boats out of Simonstown or Hout Bay (see Cohen *et al.* 2001), though a few longer charters have been arranged, including one mega-transect which went all the way south to the Prince Edward Islands and the Antarctic pack-ice.

Opportunities to see tropical species are more limited. Small numbers of day charters are arranged annually out of Durban and Richard's Bay in KwaZulu-Natal, but the returns are limited, with small numbers of birds compared to Cape pelagics (Allan & Marchant 2000). Some birders have arranged private charters out of Mozambique, mainly from Bazaruto Island, but results generally have been poor due to the low abundance and patchy distribution of tropical seabirds. Another option has been to accompany ships on summer pleasure cruises into the Mozambique Channel from Durban. However, these trips do not venture far offshore because they visit inshore attractions such as Inhaca and Bazaruto Islands. Accordingly, there has been a demand for longer, dedicated pelagics into tropical waters, designed to visit areas likely to support concentrations of seabirds.

The first such trip was scheduled in 1997 when the *MV Symphony*, a large cruise liner operating out of Durban, was chartered by Deon Coetzee as a fund-raising exercise for the Middelpunt Wetland Trust. Carrying some 450 birders and their partners, the ship sailed on the afternoon of 26 February 1997 into a blustery south-west wind, with only a couple of Indian Yellow-nosed Albatrosses *Thalassarche* (*chlororhynchos*) *carteri* to be seen. It spent three full days at sea, before docking early on 2 March. At its furthest north it reached only 26°20'S, south of Maputo (Fig. 1), due to concerns about cyclone activity in the northern Mozambique Channel.

The second charter was made earlier in the summer season, to avoid a repeat of the cyclone threat. Trevor Hardaker and Andrew Sutherland arranged a trip on a smaller cruise liner, the *MV Madagascar*, for some 220 birders in November 2005. This six-night cruise planned to visit a succession of seamounts as well as Europa Island

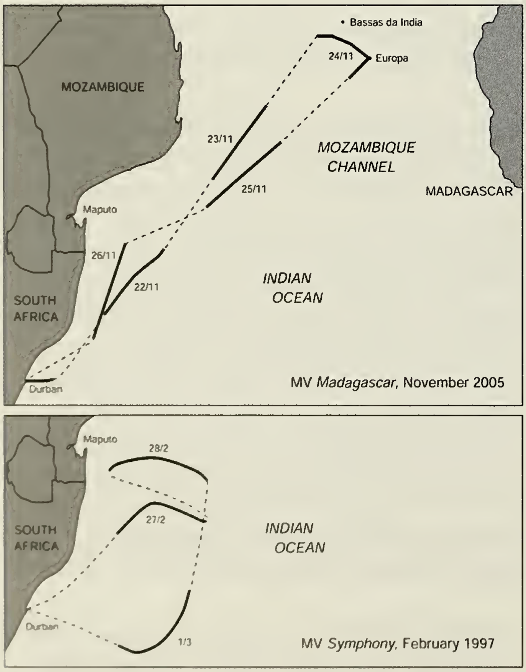


Figure 1. The approximate cruise tracks of the *MV Symphony* in February–March 1997 and *MV Madagascar* in November 2005. Bold lines indicate daytime tracks, dashed lines areas covered at night.

Trajets approximatifs du *MV Symphony* en février–mars 1997 et du *MV Madagascar* en novembre 2005. Les lignes continues indiquent les trajets parcourus de jour, les lignes interrompues les zones traversées la nuit.

Captions to figures on opposite page

Figure 2. Barau's Petrel *Pterodroma baraui* off northern KwaZulu-Natal, South Africa, 26 November 2005 (Trevor Hardaker)

Pétrel de Barau *Pterodroma baraui* au large du KwaZulu-Natal septentrional, Afrique du Sud, 26 novembre 2005 (Trevor Hardaker)

Figure 3. Adult Red-footed Booby *Sula sula* of the white-tailed brown morph typical of the Mozambique Channel, 24 November 2005 (Peter Ryan)

Fou à pieds rouges *Sula sula* adulte de la forme brune à queue blanche typique du Canal de Mozambique, novembre 2005 (Peter Ryan)

Figure 4. White-tailed Tropicbird *Phaethon lepturus* of the golden form, off Europa Island, 24 November 2005 (Neil Gray)

Phaéton à bec jaune *Phaethon lepturus* de la forme dorée, au large de l'île Europa, novembre 2005 (Neil Gray)

Figure 5. Adult male Greater Frigatebird *Fregata minor* over Hall Seamount, 24 November 2005 (Peter Ryan)

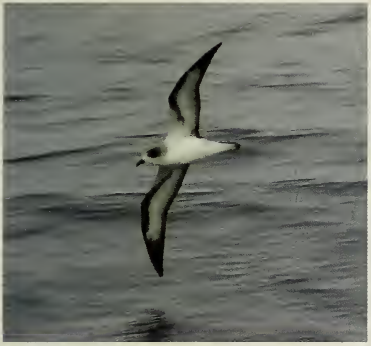
Frégate du Pacifique *Fregata minor* mâle au-dessus du Mont sous-marin de Hall, novembre 2005 (Peter Ryan)

Figure 6. Juvenile Greater Frigatebird *Fregata minor* over Hall Seamount, 24 November 2005 (Peter Ryan)

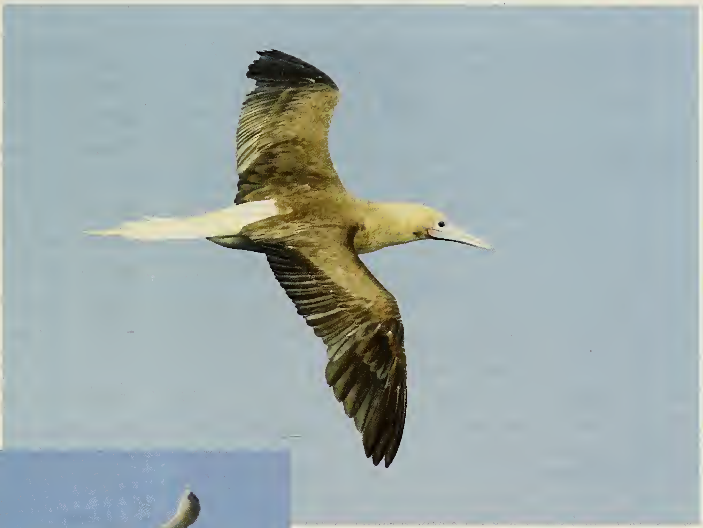
Frégate du Pacifique *Fregata minor* juvénile au-dessus du Mont sous-marin de Hall, novembre 2005 (Peter Ryan)

Figure 7. Unidentified flying fish photographed in the Mozambique Channel, 26 November 2005 (Peter Ryan)

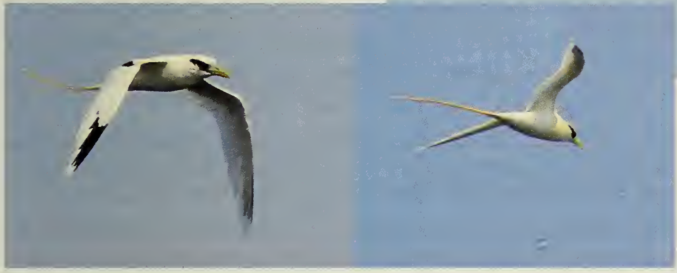
Poisson volant non identifié photographié dans le Canal de Mozambique, novembre 2005 (Peter Ryan)



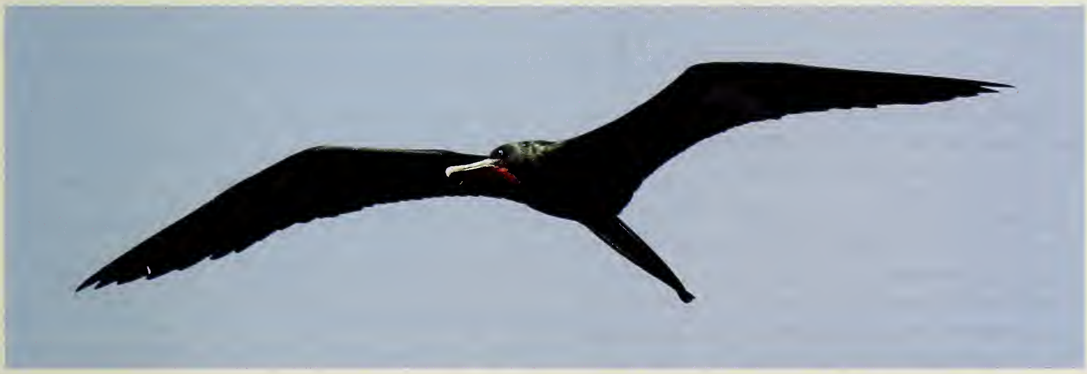
2



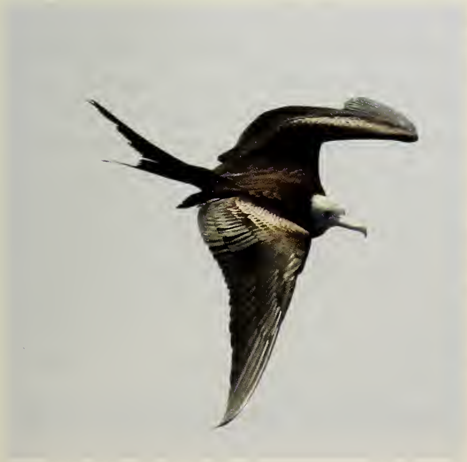
3



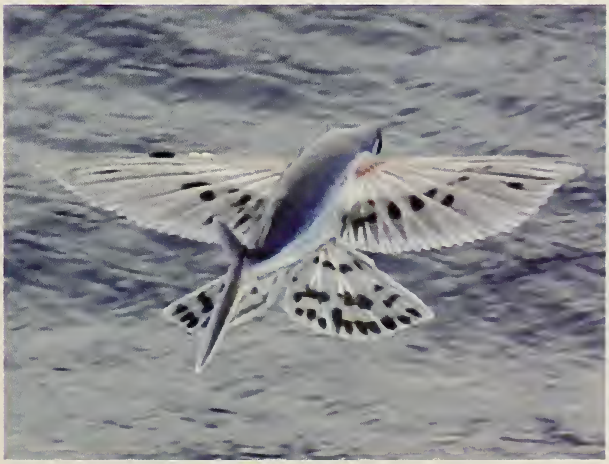
4



5



6



7

Table 1. Estimated breeding populations of seabirds on Europa Island (after Le Corre & Jouventin 1997a, Le Corre & Safford 2001).

Tableau 1. Estimation des populations d'oiseaux de mer nicheuses sur l'île Europa (d'après Le Corre & Jouventin 1997a, Le Corre & Safford 2001).

Species	No. of breeding pairs
Tropical Shearwater *Puffinus* (*lherminieri*) *bailloni*	50–100
Red-footed Booby *Sula sula*	2,800–3,800
Red-tailed Tropicbird *Phaethon rubricauda*	3,000–4,000
White-tailed Tropicbird *Phaethon lepturus*	500–1,000*
Greater Frigatebird *Fregata minor*	700–1,100
Lesser Frigatebird *Fregata ariel*	1,000–1,200
Caspian Tern *Sterna caspia*	10–15
Sooty Tern *Sterna fuscata*	500,000–1,000,000

*probably too low; see Le Corre & Jouventin (1999)

(22°20'S 40°20'E), the southernmost island in the Mozambique Channel (Fig. 1) and an important breeding site for large numbers of seabirds (Table 1). Seamounts were targeted as likely areas of higher bird densities, because localised upwellings of nutrient-rich bottom waters occur downstream from seamounts. The seamounts targeted were the Almirante Leite Banks and Hall Table Mount and Jaguar Seamount. In October 2004, Andrew Sutherland had flown over the Almirante Leite Banks in a light plane and observed a marked concentration of seabird activity relative to adjacent waters. Unfortunately, the ship's departure was delayed on 21 November, and with strong headwinds further slowing our progress, we failed to reach the Almirante Leite

Table 2. Approximate numbers of seabirds seen each day from pelagic cruises off northern KwaZulu-Natal and southern Mozambique in February–March 1997 and November 2005. * SM = Hall and Jaguar Seamounts.

Tableau 2. Nombre approximatif d'oiseaux de mer observés chaque jour pendant les croisières pélagiques au large du KwaZulu-Natal septentrionnal et du Mozambique méridional en février--mars 1997 et novembre 2005. * SM = monts sous-marins de Hall et Jaguar.

Species	*MV Symphony*			*MV Madagascar*						
	27 Feb	28 Feb	1 Mar	21 Nov	22 Nov	23 Nov	24 Nov		25 Nov	26 Nov
							SM*	Europa		
Shy Albatross *Thalassarche cauta*										2
Black-browed Albatross *Thalassarche melanophrys*				1						
Indian Yellow-nosed Albatross *Thalassarche* (*chlororhynchos*) *carteri*				2						
Great-winged Petrel *Pterodroma macroptera*			25	15	120	10			50	50
Barau's Petrel *Pterodroma baraui*			1							
White-chinned Petrel *Procellaria aequinoctialis*			1	1	2					5
Jouanin's Petrel *Bulweria fallax*						1			1–2	
Cory's Shearwater *Calonectris diomedea*	35	10	30							
Wedge-tailed Shearwater *Puffinus pacificus*		1			1					
Flesh-footed Shearwater *Puffinus carneipes*	6		8							
Tropical Shearwater *Puffinus* (*lherminieri*) *bailloni*			2			1				
Wilson's Storm-petrel *Oceanites oceanicus*									2	1
storm-petrel sp. *Oceanodroma* sp.			1				1–2			
Cape Gannet *Morus capensis*	2									
Red-footed Booby *Sula sula*					1	2	200	300		
Red-tailed Tropicbird *Phaethon rubricauda*	1	2			1	3	20	10	4	3
White-tailed Tropicbird *Phaethon lepturus*						2	10	40	1	1
Greater Frigatebird *Fregata minor*							25	25	2	
Lesser Frigatebird *Fregata ariel*							2	8		
frigatebird sp *Fregata* sp.							20	60	3	
Subantarctic Skua *Catharacta antarctica*	1			1			1	1		
Pomarine Skua *Stercorarius pomarinus*						1		1	1	
Arctic Skua *Stercorarius parasiticus*	1	1			1		1	1		
Long-tailed Skua *Stercorarius longicaudus*	25	12	20		1		4			
Roseate Tern *Sterna dougallii*							2			
Sooty Tern *Sterna fuscata*	800	200	150		200	700	400	100	350	30
Bridled Tern *Sterna anaethetus*							1		7	

Banks in daylight on either the northbound or southbound legs (Fig. 1). The rest of the cruise ran smoothly, passing over Hall Table Mount and Jaguar Seamount on the morning of 24 November; circumnavigating Europa Island that afternoon, and returning to Durban early on 27 November. The western part of Hall Table Mount is within 200 nautical miles of the Mozambican coast, but most birds seen on 24 November were outside southern African waters.

Bird counts

Initial plans to count birds using instantaneous scans within a fixed-width transect, as routinely done in the Southern Ocean (Tasker *et al.* 1984), were soon abandoned given the very low numbers of birds encountered. Accordingly, a log of the approximate total numbers of birds seen was kept. This is biased by differences in detectability with range from the ship, but it gives some indication of the relative abundance of the different species. Observers were on deck throughout daylight hours, *c.*13 hours per day. Daily totals are summarised in Table 2, with counts on 24 November divided into birds seen over Hall and Jaguar, and the remainder seen around Europa Island. Unfortunately, few birds were seen over Hall Table Mount, with most of the activity associated with Jaguar Seamount, outside southern African waters.

Albatrosses (Diomedeidae)

Only a few albatrosses of three common species were seen, all in KwaZulu-Natal waters within one day of Durban (Table 1). With the exception of one Indian Yellow-nosed Albatross, all were juveniles or immatures.

Petrels and shearwaters (Procellariidae)

Great-winged Petrels *Pterodroma macroptera* were by far the most abundant petrels on both trips, with a mean 30 seen each day, and a peak of 120 on 22 November. They were widespread in November, occurring in all but the most northerly waters, whereas they were only seen offshore in February–March. They occurred singly or in small groups, especially during calm weather when they often roosted in groups. Cory's Shearwater *Calonectris diomedea* was the next most abundant, but was only seen in February–March. In 2005, the first Cory's Shearwaters were observed off Cape Town only in mid-November, as is typical of most years (JG pers. obs.), suggesting that it was too early for them to have penetrated far into the Indian Ocean. Up to 70 have been recorded along the shelf-break on a day pelagic off Richards Bay, KwaZulu-Natal, in December (AS pers. obs.). They usually occurred in small groups.

Other shearwaters were scarce, with only small numbers of Flesh-footed *Puffinus carneipes* (February–March only), Wedge-tailed *P. pacificus* and Tropical Shearwaters *P.* (*lherminieri*) *bailloni* seen (the latter a recent split from the formerly wide-ranging Audubon's Shearwater *P. lherminieri*: Austin *et al.* 2004). White-chinned Petrels *Procellaria aequinoctialis* were confined to relatively southern latitudes, and were the most consistent ship-followers. Two to three Jouanin's Petrels *Bulweria fallax* were seen in Channel waters east of Inhambane in November, in the same general area where the two previous records for the region were made (Hockey *et al.* 2005). They were identified by their smaller size than Great-winged Petrels, with much longer, more rakish wings. Confusion with Bulwer's Petrel *B. bulwerii* was unlikely, given the birds' dashing flight, rising up to 5 m above the water in fairly strong tail winds. However, possibly the best bird was a very obliging Barau's Petrel *Pterodroma baraui* that was found roosting on the water with a Great-winged Petrel off northern KwaZulu-Natal, on 26 November, at 27°29'S 33°52'E. It was flushed by the approaching ship and then circled behind it for several minutes (Fig. 2). This is the fourth record for the region (Sutherland 2005), though the first two records (Lambert 2001) were unsubstantiated and viewed with some scepticism prior to the more recent records.

Storm-petrels (Hydrobatidae)

Disappointingly few storm-petrels were observed. In November, the ship attracted a couple of Wilson's Storm-petrels *Oceanites oceanicus.* Other storm-petrels remained frustratingly distant. In February 1997 one seemingly all-dark *Oceanodroma* was seen briefly, and in November 2005 another all-dark bird was seen more than 800 m from the ship, feeding in association with a large mixed-species flock of boobies and terns over Jaguar Seamount. The latter bird was thought to be either a Matsudaira's *O. matsudairae* or

Swinhoe's Storm-petrel *O. monorhis*. However, shortly afterwards two birds seen behind the ship were thought to be Bulwer's Petrels.

Gannets and boobies (Sulidae)

Red-footed Booby *Sula sula* was the second-most abundant species during the November trip, but they were scarce away from the general vicinity of their breeding colony on Europa Island. Only two were seen in southern African waters, both of which joined the ship in the afternoon and roosted aboard, leaving early the following morning. On Jaguar Seamount and around Europa they typically occurred in flocks of 5–50 birds. Almost all of the adults were white-tailed brown morphs, which is the predominant morph breeding on Europa Island (Fig. 3). Two white-morph birds were seen in a large feeding flock close to the island. Up to 12 birds followed the ship as we approached Europa, jockeying to perch on the foremast, and attempting to catch flying fish (Exocetidae). On leaving Europa, one booby flew alongside the bow and caught at least five fish in 90 minutes, taking four flying fish in flight and one during a shallow plunge-dive. Cape Gannets *Morus capensis* were only seen close to Durban.

Tropicbirds (Phaethontidae)

Two species were seen, both of which breed on Europa Island (Table 1). They occurred singly or in pairs, sometimes in loose association with other seabirds. Red-tailed Tropicbirds *Phaethon rubricauda* were more widespread, and this was the only species seen in February. However, in November four White-tailed Tropicbirds *P. lepturus* were observed in southern African waters, including one off northern KwaZulu-Natal. At least one was a golden morph typical of the newly described *P. l. europae* from Europa Island (Fig. 4), where 71% of birds have golden tail-streamers and a peachy-yellow wash to the body, and a further 27% have golden tail-streamers (Le Corre & Jouventin 1999). This is probably the first record of this subspecies from southern African waters (Hockey *et al.* 2005). Close to Europa Island, White-tailed Tropicbirds outnumbered Red-tailed Tropicbirds.

Frigatebirds (Fregatidae)

Frigatebirds were only encountered relatively far north in the Mozambique Channel. A large proportion of birds remained too distant to identify to species level with certainty. Greater Frigatebirds *Fregata minor* (Figs. 5–6) were most abundant, with the only confirmed Lesser Frigatebirds *F. ariel* seen outside southern African waters over Jaguar Seamount and around Europa Island.

Skuas (Stercorariidae)

Prior to the February 1997 cruise, Long-tailed Skuas *Stercorarius longicaudus* were considered vagrants to KwaZulu-Natal and unknown in Mozambique waters (Ryan 1989). We were therefore rather surprised to find the species relatively common in oceanic waters off both northern KwaZulu-Natal and southern Mozambique (Table 2). Only a few were observed in November, suggesting that it was too early for large numbers to have penetrated the Indian Ocean, though passage of Long-tailed Skuas around the Cape occurs from early October (Hockey *et al.* 2005), earlier than Cory's Shearwater. This suggests that birds in the south-west Indian Ocean mainly come around the Cape, rather than taking a more direct route via the east coast of Africa. Small numbers of Arctic *S. parasiticus* and Pomarine Skuas *S. pomarinus* were also seen, with Pomarine Skuas occurring further north than their mapped range in Hockey *et al.* (2005). Subantarctic Skuas *Catharacta antarctica* were observed close inshore at Durban and associated with large seabird aggregations at Jaguar Seamount and Europa Island, where there is a small migrant population that specialises on kleptoparasitising Red-footed Boobies (Le Corre & Jouventin 1997b). One was observed on the water next to a dead booby near Europa Island.

Terns (Sternidae)

Sooty Tern *Sterna fuscata* was the most abundant species observed, often occurring in large flocks of up to 120. They were usually encountered flying 5–30 m (rarely to 100 m) above the sea, typically dropping close to the sea only when feeding. However, several flocks were encountered roosting on the water, contrary to the oft-repeated claim that they very rarely sit on the water as their plumage becomes waterlogged (Harrison 1985, Gochfeld & Burger 1996). Sooty Terns tended to avoid the ship during the day, seldom coming closer than 200 m, but at night sometimes flew low over the aft-deck calling, apparently attracted by the ship's lights. Numbers seen off northern KwaZulu-Natal on both trips confirm that this species is much commoner in oceanic waters than previously thought (e.g. Harrison *et al.* 1997). Bridled Terns *S. anaethetus* are typically considered vagrants to the southern Mozambique Channel (Hockey *et al.* 2005), thus the small numbers observed in a few flocks of Sooty Terns in November 2005 were rather surprising. Others might have been overlooked in more distant groups of Sooty Terns. Apart from Greater Crested (Swift) Terns *S. bergii* close to Durban harbour, the only other terns seen were two Roseate Terns *S. dougallii* in a large mixed-species flock at Jaguar Seamount, which also included large numbers of Sooty Terns and Red-footed Boobies.

Landbirds

A surprising feature of the November 2005 cruise was the large number of landbirds observed, especially on the northward leg of the trip, during which there were strong northerly winds on 21–22 November. On 21 November, an unidentified buzzard *Buteo*/*Pernis* sp. was observed soaring past the ship some 20 miles offshore. The following day there was a juvenile Red-backed Shrike *Lanius collurio,* two Willow Warblers *Phylloscopus trochilus,* an Icterine Warbler *Hippolais icterina* and two Barn Swallows *Hirundo rustica* aboard, and two Amur Falcons *Falco amurensis,* an African Paradise Flycatcher *Terpsiphone viridis* and a Cinnamon-breasted Bunting *Emberiza tahapisi* flew around the ship. On 23 November a Common House Martin *Delichon urbicum* circled the ship at first light, and was later joined by up to three Barn Swallows. There were also two Ruddy Turnstones *Arenaria interpres* and a juvenile Sooty Falcon *Falco concolor,* which some thought showed characters of Eleonora's Falcon *F. eleonorae.* There were no landbirds on 24 November, with only a single Whimbrel *Numenius phaeopus* on 25 November and a very tired looking Hoopoe *Upupa epops* on 26 November.

Cetaceans and others

During the 1997 trip, a Sperm Whale *Physeter macrocephalus* and two possible Arnoux's Beaked Whales *Berardius arnuxii* were observed on 27 February, and 30 Pantropical Spotted Dolphins *Stenella attenuata,* five Striped Dolphins *S. coeruleoalba* and 20 Bottle-nosed Dolphins *Tursiops truncatus* were observed on 1 March. In 2005, Bottle-nosed Dolphins and Short-finned Pilot Whales *Globicephala macrorhynchus* were the most abundant cetaceans, being observed on 21 and 24 November and 23, 24 and 26 November, respectively. Other species seen included Humpback Whales *Megaptera novaeangliae* close to Durban on 21 and 27 November, 80 Striped Dolphins and 2 Arnoux's Beaked Whales on 23 November, a very confiding pod of False Killer Whales *Pseudorca crassidens* on 25 November, more Striped Dolphins on 26 November, and Risso's Dolphins *Grampus griseus* on 25 and 26 November.

Fish are generally difficult to identify at sea, but we had several encounters that were sufficiently close for basic identification. In November 2005, we saw several Oceanic White-tip Sharks *Carcharhinus longimanus,* two hammerhead sharks *Sphyrna* sp., two marlins *Makaira* sp., one swordfish *Xiphias* sp., four Dorados *Coryphaena hippurus* and several schools of tuna *Thunnus* sp. Flying fish were common, with at least five species photographed, including one distinctive species which cannot be identified by ichthyologist Phil Heemstra. But perhaps the most exciting 'fish' seen was the flying squid *Sthenoteuthis oualaniensius* which was seen on three days, with fairly large numbers on 26 November 2005. This amazing animal flies almost as far as a flying fish, jetting out of the sea backwards and gliding on mantle fins and cupped tentacles.

Discussion

The November 2005 trip proved highly successful, even though the largest numbers of tropical seabirds encountered were outside southern African waters. Perhaps its most disappointing feature was the small numbers and relatively poor showing of shearwaters. In comparison, the February 1997 trip yielded few tropical seabirds, in part because it barely ventured outside KwaZulu-Natal waters. However, in November 2005, several species were seen in these waters that were not observed in February, including White-tailed Tropicbird and Barau's Petrel. Whether this difference is seasonal remains to be tested, but it may be the case for Barau's Petrel. All four records from southern African waters have been in October–November (Hockey *et al.* 2005, this paper), possibly indicating movement into the southern Mozambique Channel at this time. It coincides with the incubation period for Barau's Petrel, but it is perhaps more likely that birds in southern African waters are non-breeders. The bird seen in 2005 was not moulting. The confirmation of Barau's Petrel in southern African waters raises the possibility that Kurt Lambert's sightings of Tahiti Petrels *Pseudobulweria rostrata* off Maputo in November–December (Hockey *et al.* 2005), though seemingly unlikely given the species' known range, may yet be supported by further observations. More time at sea is needed to better understand the spatial and temporal variation in seabird abundance in the southern Mozambique Channel.

Acknowledgements

We are grateful to Deon Coetzee and Trevor Hardaker for organising the pelagic birding trips into the Mozambique Channel. We thank the other guides on the trips for their support and efforts: Dave Allan, Alvin Cope, Phil Hockey, Rob Leslie, Athol Marchant, Barrie Rose, Ian Sinclair and Barry Watkins. Further thanks to M. Thierry Perillo, Terres Australes et Antarctiques Françaises, for permission to visit the seas around Europa Island, and to Frédéric Jiguet for commenting on the manuscript.

References

Allan, D. & Marchant, A. 2000. Winter pelagics off Durban. *Africa—Birds & Birding* 5(4): 33–34.

Austin, J. J., Bretagnolle, V. & Pasquet, E. 2004. A global molecular phylogeny of small *Puffinus* shearwaters and implications for the systematics of the Little–Audubon's Shearwater complex. *Auk* 121: 847–864.

Cohen, C., Spottiswoode, C. & Rose, B. 2001. Pelagic seabirding off Cape Town, South Africa. *Bull. ABC* 8: 12–17.

Gochfeld, M. & Burger, J. 1996. Sternidae (terns). In del Hoyo, J., Elliott, A. & Sargatal, J. (eds.) *Handbook of the Birds of the World.* Vol. 3. Barcelona: Lynx Edicions.

Harrison, P. 1985. *Seabirds: An Identification Guide.* Beckenham: Croom Helm.

Harrison, J. A., Allan, D. G., Underhill, L. G., Herremans, M., Tree, A. J., Parker, V., Brown, C. J. 1997. *The Atlas of Southern African Birds.* Johannesburg: BirdLife South Africa.

Hockey, P. A. R., Dean, W. R. J. & Ryan, P. G. 2005. *Roberts' Birds of Southern Africa.* Cape Town: John Voelcker Bird Book Fund.

Lambert, K. 2001. Sightings of new and rarely reported seabirds in southern African waters. *Marine Orn.* 29: 115–118.

Le Corre, M. & Jouventin, P. 1997a. Ecological significance and conservation priorities of Europa Island (western Indian Ocean), with special reference to seabirds. *Rev. Ecol. (Terre et Vie)* 52: 205–220.

Le Corre, M. & Jouventin, P. 1997b. Kleptoparasitism in tropical seabirds: vulnerability and avoidance responses of a host species, the Red-footed Booby. *Condor* 99: 162–168.

Le Corre, M. & Jouventin, P. 1999. Geographical variation in the White-tailed Tropicbird *Phaethon lepturus,* with the description of a new subspecies endemic to Europa Island, southern Mozambique Channel. *Ibis* 141: 233–239.

Le Corre, M. & Safford, R.J. 2001. La Réunion and Îles Eparses. In Fishpool, L. D. C. & Evans, M. I. (eds.) *Important Bird Areas in Africa and Associated Islands: Priority Sites for Conservation.* Newbury: Pisces Publications & Cambridge UK: BirdLife International.

Ryan, P. G. 1989. The distribution and abundance of Longtailed Skuas off southern Africa. *Ostrich* 60: 89–90.

Sutherland, A. 2005. Barau's Petrel *Pterodroma baraui* off the east coast of southern Africa. *Bull. ABC* 12: 48–49.

Tasker, M. L., Hope Jones, P., Dixon, T. & Blake, B. F. 1984. Counting seabirds at sea from ships: a review of methods employed and a suggestion for a standardized approach. *Auk* 101: 567–577.

[a]*Percy FitzPatrick Institute, University of Cape Town, Rondebosch 7701, South Africa. E-mail: pryan@botzoo.uct.ac.za*

[b]*Zest for Birds Pelagic Birding, Cape Town, South Africa.*

[c]*PO Box 10289, Meerensee, 3901, South Africa.*

Received 22 December 2005; revision accepted 16 May 2006